APPENDIX A
CLAIMS WITH MARKINGS TO SHOW CHANGES MADE

4 The method of Claim 2 **[or Claim 3]** wherein the applied voltage is in the range 50 to 20000V.

5 The method of **[any of]** Claim**[s]** 2 **[to 4]** wherein the applied voltage is greater than 300V.

6 The method of **[any of]** Claim**[s]** 2 **[to 5]** wherein the applied voltage has a substantially square shaped waveform.

7 The method **[of any]** of Claim**[s]** 2 **[to 6]** wherein the applied voltage has a pulsed waveform having a duty cycle between 0.001 and 0.5.

8 The method **[of any]** of Claim**[s]** 2 **[to 7]** wherein the voltage is switched on and off by a switching assembly comprising an insulated gate bipolar transistor.

9 The method **[of any]** of Claim**[s]** 2 **[to 8]** wherein the applied voltage has a waveform having a frequency of between DC and 100 kHz.

10 The method **[of any]** of Claim**[s]** 2 **[to 7]** wherein a metal hydride is formed on an electrode which dissociates to form hydrogen and/or deuterium atoms.

12 The method **[of any]** of Claim**[s]** 2 **[to 11]** wherein the current density generated by the applied voltage is 400,000 A/m^2 or above.

13 The method **[of any]** of Claim**[s]** 2 **[to 12]** **and further** comprising the step of feeding the electrolyte past the electrodes.

16 The method **[of any]** of Claim**[s]** 2 **[to 15]** **and** further comprising the step of generating a magnetic field in the region of the electrodes.

19 The method **[of any]** of Claim**[s]** 16 **[to 18]** wherein the magnetic field is arranged to cause the plasma discharge generated adjacent the cathode to be spaced therefrom.

20 The method **[of any]** of Claim**[s]** 2 **[to 19]** wherein hydrogen and/or deuterium atoms are formed using a first cathode and the voltage applied to generate the plasma discharge is applied across an anode and a second cathode.

21 The method of Claim 20 **[when dependent on Claim 13 or any claim dependent thereon]** wherein the second cathode is downstream from the first cathode.

22 The method **[of any]** of Claim**[s]** 2 **[to 21]** wherein a cathode electrode comprises tungsten, zirconium, stainless steal, nickel and/or tantalum.

24 The method **[of any]** of Claim**[s]** 2 **[to 23]** wherein the anode electrode is formed of a material which is inert with respect to the electrolyte.

26 The method of **[any preceding]** claim **2** wherein the temperature of the plasma is approximately 6000K or above.

27 The method of **[any preceding]** claim **2** comprising the step of varying the ratio of catalyst to water in the electrolyte in the range 1 to 20 mMol.

28 The method of **[any preceding]** claim **2** wherein the electrolyte comprises water and/or deuterated water and/or deuterium oxide.

30 The method of Claim 28 **[or Claim 29]** **and further** comprising the step of varying the ratio of water to deuterium

oxide and/or deuterated water in the electrolyte to control energy generation.

31 The method of **[any preceding]** claim **2 and further** comprising the step of heating the electrolyte to a temperature between 40 to 80°C prior to generating the plasma discharge.

32 The method of **[any preceding]** claim **2** wherein fusion occurs via at least one of the following pathways:

$^{2}_{1}D + ^{2}_{1}D = ^{3}_{2}He + ^{1}_{0}n$

or

$^{2}_{1}D + ^{2}_{1}D = ^{3}_{1}T + ^{1}_{1}H$

or

$^{1}_{1}H + ^{1}_{1}H = ^{2}_{1}D + \beta^{+} + \tau$

33 Apparatus for carrying out **[the]** **a** method of **[any preceding claim]** **releasing energy** comprising an anode, first and second cathodes, a reaction vessel having an inlet and an outlet, means for feeding an electrolyte through the vessel from its inlet to its outlet, the electrolyte having a catalyst therein suitable for initiating transitions of hydrogen and/or deuterium atoms in the electrolyte to a sub-ground energy state, means for applying a voltage across the anode and the first cathode to form hydrogen and/or deuterium atoms, and means for applying a voltage across the anode and second cathode to generate a plasma discharge in the electrolyte, the second cathode being downstream from the first cathode.